

Claims 1 – 7 are proposed to be replaced by new claims 8 – 14. In the new claim 8 (which corresponds to old claim 1) amendments have been made to meet all of the objections raised by the Examiner in paragraph 1 of the Office Action. Similarly, in the new claim 14 (which corresponds to original claims 7) amendments have been made to meet the objections of the Examiner set out in paragraph 1 of the Office Action. The Examiner's suggested amendment for claim 7 was adopted and the Applicant was obliged to the Examiner for the suggestion.

With the claims now being clearer and more definite as requested by the Examiner, it is believed that the prior art rejections made by the Examiner in paragraphs 2 – 6 of the Office Action can be waived. More specifically, the USA Patent No. 3,514,776 to Mulready does disclose a mirror in which the pressure is reduced in a suction chamber, causing a flat mirror plate to distort into a mirror of desired curvature. However, the Mulready holding means merely holds the perimeter of the flat mirror plate in position around the edge of the suction chamber. The holding means 16 is a ring member fixed to the cylindrical section of the chamber. Tensioning means 23 does not tension the mirror, but instead is used to hold the perimeter of the mirror in place. The Mulready component 19 is a sealing means, provided at the free end of cylindrical sections 12, 23. Ring elements 16, 18, 21, 23 when used in conjunction with the sealing means 19 hold the mirror in place on the end of the suction chamber. A control device 20 is used to increase or decrease the pressure in the chamber in order to vary the curvature of the mirror.

In the present application to Creek, the holding means is not used to hold the mirror in place. Instead, the holding means holds the tensioning means which is in contact with the surface of the mirror. As the mirror film is held on a suction chamber, varying the pressure in the suction chamber is able to be used to vary the curvature of the mirror film. When the mirror film has been curved by the action of the suction chamber, the Creek tensioning means can also be used to further vary the curvature of the mirror. Also, the Creek holding means allows the curvature of the mirror to be varied locally, for example at the edges of the mirror. It is thus believed to be clear that the new claim 8 is not anticipated by Mulready.

With regard to USA Patent No. 4,890,903 to Treisman, there is disclosed a method of holding components of the suction chamber together. The positions of bolts are indicated by 23 in Figure 1. The holding means 18, 24, 25 serve to hold section 18 to middle sections 17, and bottom section 19 to middle section 17. The action of clamping these sections together holds the film 10, 11 in position by means of O rings, 13, 14, 15, 16. As a result, the holding means only holds the film in place via the O rings. Varying the tension on these does not influence the shape of the film which is influenced by the fluid in the chamber 21. Thus the Treisman tensioning and holding means do not influence the shape of the film. It is thus believed that the Applicant's new claim 8 is clear of the Treisman disclosure.

With regard to USA Patent No. 3,936,159 to Pavenick, there is disclosed a suction chamber for forming a curved mirror. The holding means 48 and the tensioning means 46 again only serve to hold the mirror film in a desired position.

Variation in the curvature of the mirror film is again determined by varying the air pressure in the chamber. ~~The holding and tensioning means have no effect on the curvature of the mirror film.~~ Thus it is believed that the new claim 8 is clear of the Pavenick disclosure.

The other cited patents raised by the Examiner but not relied upon have also been carefully considered. None of these patents is believed to affect the allowability of the new claim 8, nor the above submissions.

The Applicant relies for the patentability of claims 9 – 14 on the fact that all of these claims include all of the features of claim 8, which claim is believed to be allowable for the above reasons.

In view of the objections to the drawings in paragraph 7 of the Office Action, there is filed herewith new drawings, with Figures 1 and 2 being labeled PRIOR ART as requested by the Examiner.

The amendments proposed above for the paragraph bridging pages 3 and 4 of the specification are to bring this paragraph into agreement with the new claim 8.

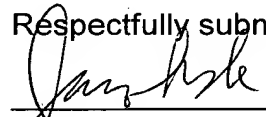
In accordance with the Applicant's duty to disclose all known prior art, it is hereby disclosed that the Assignee of the Applicant has corresponding United Kingdom and European patent applications on which searches have been conducted. For the United Kingdom patent application, the Examiner has cited British Patent Nos. 2314424 and 952115. For the European patent application, the

Examiner has cited German Patent No. 3721114 and USA Patent Nos. 4592717, 6050692, 5997146 and 5552006. An Information Disclosure Statement is filed herewith. The Applicant has carefully considered the patents cited by the United Kingdom and European Patent Office Examiners, and these patents are not believed to affect the allowability of the new claims 8 – 14, nor the above submissions.

Each of the Examiner's rejections has been addressed or traversed. Accordingly, it is respectfully submitted that this application is in condition for allowance. Early and favorable action is respectfully requested.

If for any reason this **RESPONSE** is found to be **INCOMPLETE**, or if at any time it appears that a **TELEPHONE CONFERENCE** with Counsel would help advance prosecution, please telephone the undersigned or one of his associates, collect in Waltham, Massachusetts, at (781) 890-5678.

Respectfully submitted,



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apparatus is usually mounted on some kind of motion system, the motion system expands, requiring a larger and more expensive building to house the display apparatus, for example a simulator. Film of adequate quality is only available up to a certain width, and this also limits the size of the display apparatus. Such limitations usually result in compromises in the size of the covered edge, so that some distortion is still seen around the edge of the image. Vertical linearity of the image may also be compromised.

It is an aim of the present invention to provide a method of constructing a thin film mirror, which method results in a thin film mirror having an improved edge quality without the need for a substantial increase in the size of the thin film mirror.

Accordingly, the present invention provides a method of constructing a thin film mirror, which method comprises:

- (i) providing a suction chamber with edges which lie on a ~~required~~ <sup>of the thin film mirror being constructed</sup> ~~mirror~~ surface;
- (ii) providing tensioning means which is forced into contact with <sup>a</sup>film which is for the thin film mirror being constructed and which is adjacent to at least one of the edges of the suction chamber such that tension in the film parallel to the edge is increased; and
- (iii) providing holding means for
  - (a) holding the tensioning means;
  - (b) locally adjusting holding pressure on the tensioning means;
 and

- (c) feeding the tensioning means into position after the film has been attached to the suction chamber.

The method of the present invention is able to provide a thin film mirror having an improved edge quality, without the need to substantially increase the size of the thin film mirror.

The method of constructing the thin film mirror may be one in which the tensioning means is a rod. Preferably the rod is of circular cross section but the rod may be of any suitable and appropriate cross sectional shape if desired, for example rectangular, square, elliptical, triangular, or combinations of shapes. Generally the tensioning means should present a smooth face to the film so as not to damage the film. Where the tensioning means is a rod of circular cross section, then the rod may be a tube or a solid rod. The tensioning means may be semi-rigid, for example a semi-rigid tube.

The holding means may have a first portion for extending over the tensioning means, and a second portion for extending under the suction chamber. The holding means may be of any suitable and appropriate shape. The holding means may operate like a clamp.

The present invention also provides a thin film mirror when produced by the method of the invention.

Embodiments of the invention will now be described solely by way of example and with reference to the accompanying drawings in which: